

## CLAIMS

1. An optical receiver comprising:
  - an optical divider that divides an optical input signal into a plurality of paths;
  - 5 an optical-to-electrical converter that converts the divided optical input signal into an electrical signal;
  - a discriminator that outputs a discrimination result obtained by discriminating the electrical signal output from the optical-to-electrical converter based on a
  - 10 predetermined threshold; and
  - an operational circuit that performs a predetermined operation based on the discrimination result output from the discriminator.
- 15 2. The optical receiver according to claim 1, wherein the predetermined threshold is set to a value different from an optimum threshold for discriminating the optical input signals divided into the paths with a single discriminator.
- 20 3. The optical receiver according to claim 1, wherein the optical divider is an optical polarization divider that divides an optical input signal according to a polarization state of the optical input signal.
- 25 4. The optical receiver according to claim 3, further comprising:
  - an optical polarization controller provided at a pre-stage of the optical polarization divider;
  - 30 an optical monitor that monitors an optical signal power on each of the paths; and
  - a control circuit that controls the optical polarization controller based on the optical signal power,

wherein

the control circuit controls the optical polarization controller such that respective output values of the optical signal powers on the paths monitored by the optical monitors become substantially equal.

5      5.    The optical receiver according to claim 1, wherein the threshold of the discriminator is substantially equal between the discriminators.

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6.    The optical receiver according to claim 1, wherein the discriminator is a soft decision discriminator, and

the optical receiver further comprises:

15            an operational circuit to which each of a plurality of discrimination results of the soft decision discriminators is input;

a bit-error-rate monitoring unit that monitors an error rate of an output result of the operational circuit;

20    and

a path selecting unit that selects an output result having a low error rate based on monitoring information of the bit-error-rate monitoring unit.

25    7.    The optical receiver according to claim 1, wherein the operational circuit is a logical OR circuit.

8.    The optical receiver according to claim 1, wherein the operational circuit is a logical AND circuit.

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9.    The optical receiver according to claim 1, further comprising:

a bit-error-rate monitoring unit that monitors an

error rate of an output result of the operational circuit;  
and

a discrimination-threshold control circuit that  
changes a threshold level of the discriminator based on  
5 monitoring information of the bit-error-rate monitoring  
unit, wherein

the operational circuit switches a function of the  
operational circuit based on the threshold level of the  
discriminator.

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10. The optical receiver according to claim 9, wherein  
the operational circuit has functions of a logical OR  
circuit and a logical AND circuit.

15 11. An optical communication system comprising:  
an optical transmitter; and  
the optical receiver according to claim 1.